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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/540,365

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Hiroshi Morikawa

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EXAMINER

YEE, DEBORAH

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

04/11/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,365	Applicant(s) MORIKAWA ET AL.	
	Examiner Deborah Yee	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 3, 2008 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4 to 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the computer-generated English translation of Japanese patent 2001-254153 (hereinafter JP'153).

4. JP'153 in claims 1 to 3 on page 1 discloses a ferritic stainless steel alloy having a composition with constituents whose wt% ranges overlap those recited by the claims; such overlap establishes a prima facie case of obviousness since it would be obvious for one skilled in the art to select the claimed alloy wt% ranges over the broader disclosure of the prior art because the prior art teaches similar properties such as high workability.

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5. Although prior art alloy can contain 0.01 to 0.9% Ti and 0.005 to 0.08% N, such would not be excluded by the limitation "consisting of" recited in the claims. Note Ti in JP'153 is considered optional and need not be present; and N can be present as low as 0.0005% which would be equivalent to an inevitable impurity level.

6. With regard to inclusion content, prior art steel can contain Al and Mg oxides with a grain size of 0.05 to 5 μm ; and therefore would meet claimed Al_2O_3 or $\text{Al}_2\text{O}_3\text{-MgO}$ inclusions with a grain size of 10 μm or less.

7. In addition, JP'153 in paragraph [0027] on page 5 teaches manufacturing steel sheet with cold rolling to thereby produce a work-hardened ferritic steel structure.

8. Although index of cleanliness of 0.06% or less as recited by the claims is not taught by prior art, such would be expected since impurities are kept extremely low. Note paragraphs [0013] and [0014] teach improving processability, by keeping P and S as low as 0.005% and 0.0001%, respectively.

9. Claims 4 to 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the English translation of Japanese patent 40227094 (JP'094) for the reasons set forth in the previous office actions dated December 3, 2007 and May 9, 2007.

Response to Arguments

10. Applicant's arguments filed April 8, 2008 have been fully considered but they are not persuasive. It was argued that inventive claims 4 and 6 have been amended to recite stainless steel composition containing Cr range of 10-12.6% which would patentably distinguish over JP'094 steel containing 14 to 26% Cr. The lower Cr content in the steel produces softer steel at the annealing. Accordingly, the strength of the steel

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composition of the present invention is improved by work-hardening i.e., cold rolling. In order to obtain such improved strength, a steel composition including this lower Cr content requires higher rolling reduction, compared to a steel composition having a higher Cr content. Although cold-rolling at high rolling reduction generally decreases bendability, the steel of the present invention has been found to have excellent bendability despite being cold-rolled at high rolling reduction. JP'942 fails to teach this concept and specifically teaches a Cr content which is greater than that of the presently amended claims.

11. In response to Applicant's arguments, it is the Examiner's position that page 16 of JP'094 teaches Cr at 14% is indispensable for improving corrosion resistance but also recognizes that high Cr can deteriorate processability (cold working and bendability). Hence to lower Cr to improve processability yet reduce corrosion resistance would be a matter of routine optimization of an alloying constituent to achieve the desired balancing of properties which is well within the skill of the artisan and productive of no new and unexpected results.

12. Applicant stated that present invention steel with lower Cr content exhibits excellent bendability despite higher rolling reduction required to improve strength. It is the Examiner's position that this inventive concept is also suggested by prior art. Note test data in table 7 on page 13 and table 8 on page 16 of Applicant's specification show examples containing Cr at $\leq 12.6\%$ subjected to cold working reduction 20-35% having high bendability. Similarly, JP'094 in the tables on pages 21 to 23 disclose steels containing Cr as low as 15.1% which are subjected to cold rolling reduction at 30%

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(within Applicant's high reduction range of 20-35% for lower-Cr containing steels) yet despite high reduction is also able to achieve excellent bending property. Hence claims would not significantly distinguish over prior art.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
Art Unit 1793

/DY/